

EBOOK

MONITORING FOR MODERN IT

Two monitoring solutions worth examining head to head are Microsoft® System Center Operations Manager (SCOM), and SolarWinds® Server and Application Monitor (SAM).

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Introduction

Monitoring is critical to the reliable operation of IT. Modern IT consists of so many different operating system environments (OSEs), applications, and infrastructure components that it is inevitable that both human error and unexpected interactions between IT solutions will occur. Monitoring lets us know what's gone wrong, when, and where, but not all monitoring is created equal.

Having recently reviewed the basics of server and application monitoring, examined IT monitoring must-haves, and explored the changing face of IT monitoring, it is worth taking the time to focus on some practical examples. Two monitoring solutions worth examining head to head are Microsoft® System Center Operations Manager (SCOM), and SolarWinds® Server & Application Monitor (SAM).

To understand the differences between the two solutions, it helps to understand the basic structure of monitoring solutions. Monitoring solutions have three basic components. The first is a database engine that stores data. The second is a data ingestion component that gathers data

such as log and event information, and then injects it into the database.

The third component of a monitoring solution is the analytics package. The analytics package itself is typically split into two components: first, a visualization engine that processes the collected data into something humans can understand, powering dashboards, reports, and auditing functionality, and second, an alerting system.

Even if they ship as a single monolithic product, all monitoring solutions follow the above basic design. Both SCOM and SAM use Microsoft SQL Server as the database back end, so there's no room for differentiation between the two products there. The data ingestion and analytics capabilities, however, differ greatly between the two products.



Ingestion

Out of the box, SCOM can only ingest data from a handful of sources. At first glance, this doesn't make SCOM particularly useful, however, SCOM expands its native data ingestion support through the addition of management packs.

To accomplish ingestion, SAM uses templates. There is both an official master application directory of supported solutions and a community content exchange. These ingestion add-ons give both monitoring solutions the ability to collect information from a different set of OSEs, applications, and infrastructures, making a direct comparison of SCOM and SAM somewhat difficult.

Out of the box, SAM appears to talk to more solutions than SCOM does, but once the vendor-managed repositories are factored in, they both seem to support similar numbers of solutions. A careful examination of what each solution supports, however, is revealing.

SCOM has excellent support for name-brand solutions from leading tech titans. For example, SCOM has a management pack for Fujitsu® ServerView® Linux® servers and for Lenovo® ThinkServer®, neither of which are supported by name by SAM.

To contrast, SAM has native support for common midmarket solutions in the form of built-in templates. The Barracuda® Spam and Antivirus Firewall, for example, is extraordinarily popular outside the Fortune® 2000, and is

supported by SAM. No formal SCOM management pack exists to support it.

SAM also offers support for highly general, standardized solutions such as a File Change Monitor, File Age Monitor, OpenLDAP monitor, and even two different clock drift monitors. This support, when combined with SAM's customizability has drawn praise from customers.

While there has historically been a wide gap between the two monitoring solutions on ingestion, both vendors are working hard to close it. SCOM was once famous for lacking any support outside the Microsoft ecosystem, with a thriving market in commercial third-party SCOM management packs emerging. SAM, similarly, had traditionally lagged on supporting name-brand solutions.

Both vendors have made significant efforts to expand their support in recent years. As such, it is hard to point to either and declare one better than the other on the basis of ingestion support alone.

Dashboards, Reporting, and Analytics

If both SCOM and SAM have achieved a sort of rough parity in their ingestion support, then much of the comparison between the two solutions boils down to how each product performs at extracting information from the data they collect. When it comes to the analytics portion of monitoring, history isn't kind to SCOM.

For over a decade, sales teams at competing monitoring vendors—including SolarWinds—have won the accounts of organizations using SCOM on the strength of their solution's dashboards, reporting, and analytics. Hypothetically, one can coax SCOM into acting as a much more capable product than most customers give it credit for; however, this is far from a simple undertaking.

System Center products have a reputation for poor reporting and analytics capabilities. As a family of products, they've been considered complex, difficult to configure, and offering poor visualizations with few actionable insights.

SCOM in particular has been a pain point for Microsoft customers who have switched to SolarWinds. Customers have cited alerting, and even the ability to proactively identify and fix problems as reasons they have embraced SolarWinds.

Perhaps the best evidence for SCOM's poor analytics



and reporting capabilities, however, is that multiple third-party vendors exist to add this functionality to SCOM. Squared Up is a notable third-party vendor that has become quite popular amongst SCOM customers because it adds usable HTML5 dashboards to SCOM, giving it the ability to act as a basic Network Operations Center (NOC) platform. Squared Up also adds application discovery and mapping capabilities to SCOM. Microsoft themselves are proudly advertised by SquaredUp as customers.

The importance of having these capabilities cannot be overemphasized. More to the point, perhaps, is that these capabilities need to be out-of-the-box features in today's increasingly automated IT departments. The days where systems administrators have months or years to spend tuning monitoring solutions to extract actionable insights are long past.

It should not be a surprise, then, to see that one of the prominent customers' names on Squared Up's front page marketing carousels is Microsoft themselves. It should not be surprising to see that Microsoft uses SCOM, their own product; however, it should concentrate one's attention to note that even Microsoft needs to turn to a third-party to extract actionable insights from the monitoring solution they make.

Expanding Definitions

The analytics of SolarWinds SAM are significantly more capable than SCOM. SAM has no need for Squared Up to provide adequate visualizations of data. SAM has award-winning NOC capabilities augmented by best-in-class reporting and analytics.

To simply call SAM the winner on the basis of the above would be to do a disservice to both vendors, and to readers of this piece. Microsoft could buy Squared Up tomorrow, and while SAM's dashboard, reporting, and analytics capabilities would still be superior to a combined SCOM and Squared Up, the gap between the two products would narrow significantly.

In addition, neither SCOM nor SAM exists in a vacuum. Both are part of a suite of applications aimed at instrumenting and automating the world's data centers, and they must be considered in context.

SCOM is a part of the Microsoft System Center suite. In addition to SCOM, the System Center suite contains

Configuration Manager, Data Protection Manager, Endpoint Protection, Orchestrator, Service Manager, and Virtual Machine Manager. Licences for this suite are typically sold as a bundle, and the suite is very popular with Microsoft customers.

Microsoft beats SolarWinds on packaging and licensing ease of use. After over a decade of complicated System Center licensing, Microsoft has finally begun to treat the entire suite as a single entity, giving them a significant real-world advantage over SolarWinds that should not be ignored in any objective assessment of the two products.

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SolarWinds also offers a number of interrelated IT management applications, and for the past several years has been working to unify their user experience into the Orion® Platform, which is more than simply an attempt to create a single pane of glass for multiple applications.

The Orion Platform represents an ongoing effort by SolarWinds to integrate their products such that the sum is greater than the whole. Unfortunately, licensing integration, bundling, and packaging remain SolarWinds' primary weakness.

Discovery, Event Correlation, and Root Cause Analysis

SAM's true value lies in features and capabilities that are beyond those activities in which a "traditional" monitoring solution engages. Many of these are features of SAM itself, but some are features of other products in the SAM ecosystem.

Like Squared Up, SAM features application discovery. SAM's discovery capabilities are quite mature, and enable identification of OSEs, applications, and infrastructure

components on a variety of schedules, and with a sophisticated set of parameters available to narrowly tailor scans as needed.

SAM also takes reporting and analytics a step beyond SCOM (with or without Squared Up) and incorporates both event correlation and root cause analysis. SAM includes access to the Orion PerfStack™ dashboards, which offer the ability to analyse the performance of stacks of related applications, both historically and in real-time. PerfStack provides a simple, human-understandable means to determine the root cause of IT problems, and is one of SolarWinds' most celebrated features.

SAM augments the above features with the new Application Dependencies feature. Application Dependencies automates the detection of application and infrastructure interactions. In turn, this leads to more accurate monitoring for individual applications, better grouping of applications into services, and more accurate and effective root cause analysis.

Bringing SolarWinds' other Orion Platform applications into the mix adds to both event correlation and root cause analysis capabilities. Other Orion applications such as Network Performance Monitor and Virtualization Manager significantly augment SAM's capabilities.

Beyond the traditional realm of real-time reporting and dashboards, SolarWinds has a significant lead over Microsoft when it comes to extracting actionable insights from the data collected. This is true even when comparing the complete Microsoft System Center suite to the SolarWinds Orion Platform.

Zero to Go

Monitoring applications in general have traditionally had reputations as being complex to install, tedious to configure, and difficult to maintain. In a world of Software as a Service (SaaS) and turnkey clouds, as a group, monitoring applications remain of a relic of the past.

Microsoft System Center in particular has long been the standard-bearer of administrative misery. During the mid-2000s, the frustration surrounding the installation and configuration of System Center became something of a legend. Microsoft set about to make this easier, and other vendors sought to learn from Microsoft's mistakes.

More than a decade later, Microsoft has made vast im-



provements. Unfortunately, the usability debt was so vast that even to this day, System Center lags behind its competitors, with customers frequently citing ease of installation, ease of configuration, and long-term manageability as reasons for switching to SolarWinds, away from SCOM.

Measuring ease of use in this space is something of a balance. There are use cases with hard numbers attached in which customers cite ease of use and/or ease of manageability as core reasons for listed savings. Despite this, any discussion of ease of use is always going to be a little bit subjective.

There are, for example, innumerable SaaS-based monitoring applications. Insert credit card, fill out a form, and your monitoring application is ready. For the most part, these are cloud-based startups. The solutions in question typically rely on OS agents, have a lack of pre-canned application templates, and don't offer robust application discovery.

SolarWinds' monitoring solutions demonstrate a third usability approach. These applications need to be installed by administrators; however, much effort has been made by SolarWinds to make that installation as simple and pain-free as possible. SolarWinds' application detection capabilities, combined with their strong library of available templates, make going from installation to functional solution quick and simple.

Moving Targets

Both Microsoft and SolarWinds are aware of their weaknesses, and are working to address them. SolarWinds is working on packaging and integration, while Microsoft has adopted a new development cadence for System Center that it hopes will help address its technical debt. Both companies are moving targets.

While SolarWinds works to more closely integrate its offerings, Microsoft is building on its already significant integration to expand System Center support for and coverage of its Azure® cloud. Microsoft considers Azure a first-class citizen within its ecosystem, and aims to make System Center a management and monitoring suite that covers an organization's IT, whether it lives on-premises or off.

Outside of the bubble of organizations ardently committed to Microsoft's vision, however, Microsoft products are only one part of the technology mix.

Provided, of course, that the IT solutions in question exist within Microsoft's ecosystem. Support for non-Azure clouds is patchy in System Center, and looks set to remain so for the foreseeable future. This will change in time—Microsoft did eventually add significant Linux support to SCOM—but how much time is an open question.

Similarly, as Microsoft works to bring its ease of use, dashboards, reporting, and analytics up to speed, SolarWinds is investing heavily in features that allow more precise insights to be extracted from their data, more easily. SolarWinds is working to keep pace with the best and brightest startups in the monitoring market, vendors that are incorporating machine learning, artificial intelligence, and other forms of bulk data computational analysis (BDCA) into their offerings.

Wider Ecosystem Considerations

Putting aside all other discussions about investment or development priorities, the ecosystem in which vendors and their products operate matters. SCOM is developed to meet the needs of Microsoft and its customers, whereas SAM

is developed in large part to meet the needs of those who found SCOM (and similar solutions) inadequate.

Microsoft's ecosystem has always been something of a walled garden; despite recent moves towards embracing some open-source projects, the Microsoft ecosystem is still very much about Microsoft on Microsoft on Microsoft, offered as a service, and with some additional Microsoft. Outside of the bubble of organizations ardently committed to Microsoft's vision, however, Microsoft products are only one part of the technology mix.

This creates something of a chicken-and-egg problem. For an organization to deploy a new infrastructure component, application, or service today, they must be able to both back up and monitor that solution. Microsoft has no incentive to build support for emerging solutions, especially those which compete with its own offerings, until such a time as a number of its largest clients demand such support.

As a result, organizations that rely on SCOM will not be able to safely embrace emerging solutions without either adding another monitoring solution, or waiting until enough other organizations demand support that Microsoft acts. This denies—or at least complicates—the early-mover advantage of adopting new IT solutions, and puts a subtle pressure on organizations to stick with Microsoft's own solutions, furthering monoculture and lock-in.

SolarWinds, on the other hand, faces pressures that are quite different. To remain relevant in a mature market, SolarWinds must constantly evolve their products. This evolution involves a constant expansion of ingestion templates, continual refinement of their data insight capabilities, and a wider, more heterogeneous view of support.

Verdict

Right now, today, SAM beats SCOM because SAM's data insight capabilities are unquestionably superior to anything SCOM can bring to the table. Even when paired with Squared Up, Microsoft's own choice for extracting insights from SCOM, SAM is more than a match for the combined solution stack.

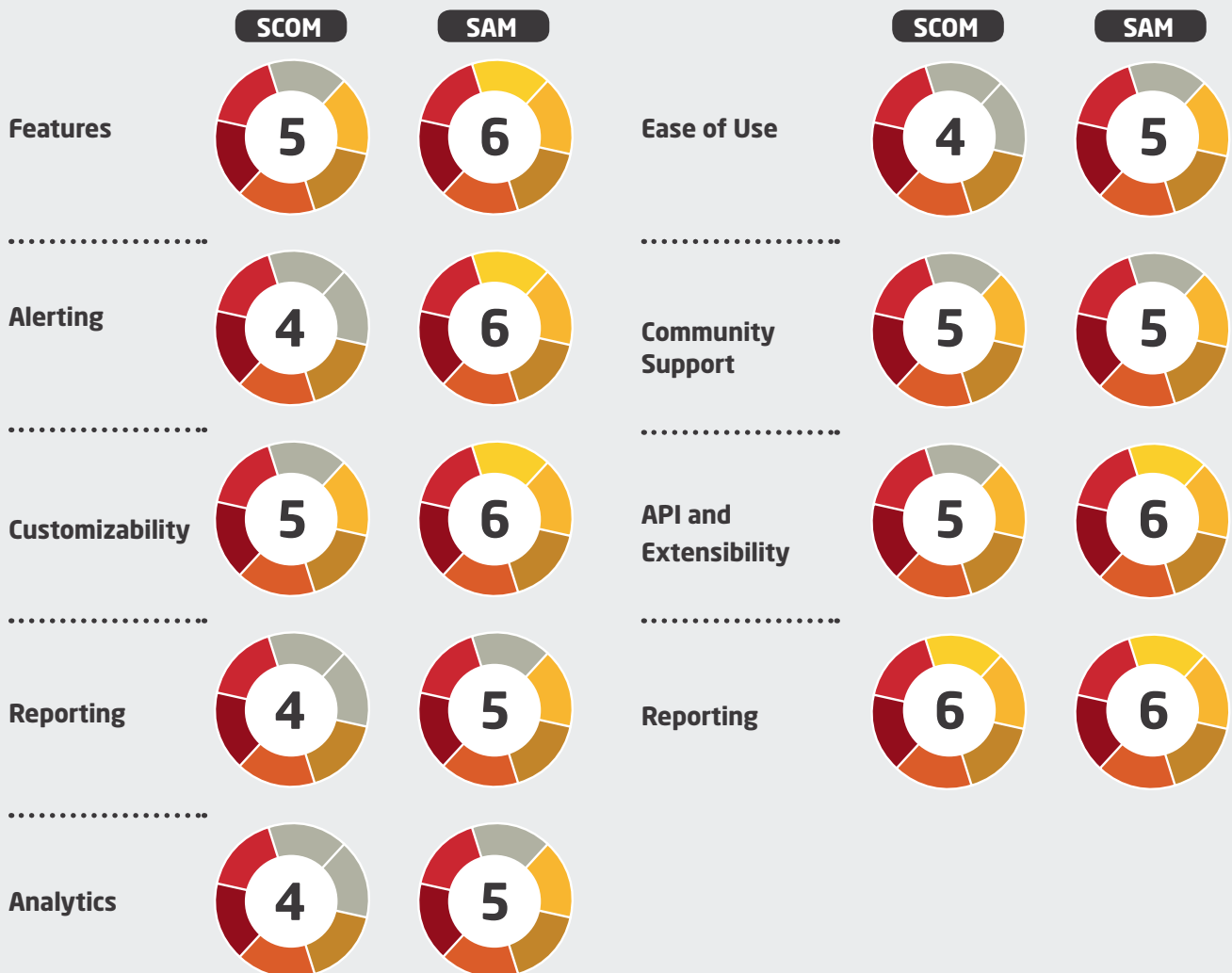
Monitoring solutions are an investment, however, as they take time to set up, and time to train staff to use. Selecting the monitoring solution for your organization depends as much upon whether or not you believe the solution in question will still meet your organization's needs five or ten years from now as whether it does so today.

Consider your organization's use of IT. Is it increasingly heterogeneous, moving towards the hybrid multi-cloud future that seems inevitable for so many organizations around the world? Or is it tightly coupled to Microsoft's ecosystem, their vision, and their products?

How much do actionable data insights matter to your organization? Are your systems administrators comfortable

doing root cause analysis on their own, or do you foresee a need for increasingly sophisticated tools to automate root cause analysis being important as your organization grows?

These considerations should ultimately help you choose between SCOM and SAM, and should help narrow the field for any other monitoring solution contenders you may also be considering.



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